GEOGRAPHIC NEWS BULLETINS

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THE NATIONAL GEOGRAPHIC SOCIETY

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General Headquarters, Washington, D. C.

CONTENTS FOR WEEK OF OCTOBER 19, 1925. Vol. IV. No. 12

Note to Teachers.—This is the first issue of the GEOGRAPHIC NEWS BULLETINS for the school year 1925–26. No bulletins were issued during the summer vacation months.

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THE ESKIMO EATS MOST OF HIS FOOD RAW

HOW TO OBTAIN THE BULLETINS

The Geographic News Bulletins are published weekly throughout the school year (thirty issues) and will be mailed to teachers for one year upon receipt of 25 cents (in stamps or money order). Entered as second-class matter, January 27, 1922, at the Post Office at Washington, D. C., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized February 9, 1922.

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MacMillan Expedition Collects Rare Arctic Specimens

A WEALTH of important specimens of the fish, birds and land animals and plants of the Arctic, some of them before unknown to science, has been collected during the past summer by the MacMillan Arctic Expedition under the auspices of the National Geographic Society. Dr. Walter N. Koelz, one of the scientists of the expedition, has sent by radio the following brief outline of some of his activities and observations in northern Greenland:

"We had ample opportunity for hard work at Etah and collected there many fine specimens of bird and animal life which we are sure will be of great interest to the National Geographic Society.

Winged Snails in Etah Waters

"At Etah the water was cloudy with jellyfish of a diaphanous gray, but just before we left there appeared many winged snails. These curious creatures float through the water, propelling themselves as they go.

"One of the interesting aquatic animals is the Liparis, which resembles the Bull Head, but has modified its ventral fins into a powerful sucker by means of which it attaches itself to the rocks. The suction is so powerful that considerable effort is required to dislodge it.

"You will understand, of course, that I am giving a popular account of some of our finds of greatest interest to the laymen; many of our specimens will require considerable scientific study for classification and further analysis.

"There has been collected a good series of Greenland Red Poll in juvenile plumage. This species is scantily represented in most of the museums of the United States and birds taken in summer are very rare in American collections.

"A series of purple Sandpipers has also been obtained. They are in their first juvenile plumage, which is unknown to most ornithologists.

Plants Are Stemless

"All the land plants necessarily are stemless, since any part extending above the scant snow covering is frozen off and none of them grows more than a few inches high, including willow and birch trees.

"The less varied water vegetation is more spectacular. The Giant Kelp is common and grows to a length of twenty feet and more, its curving stems, half afloat, are frequently mistaken, even by the Eskimos, for animal life.

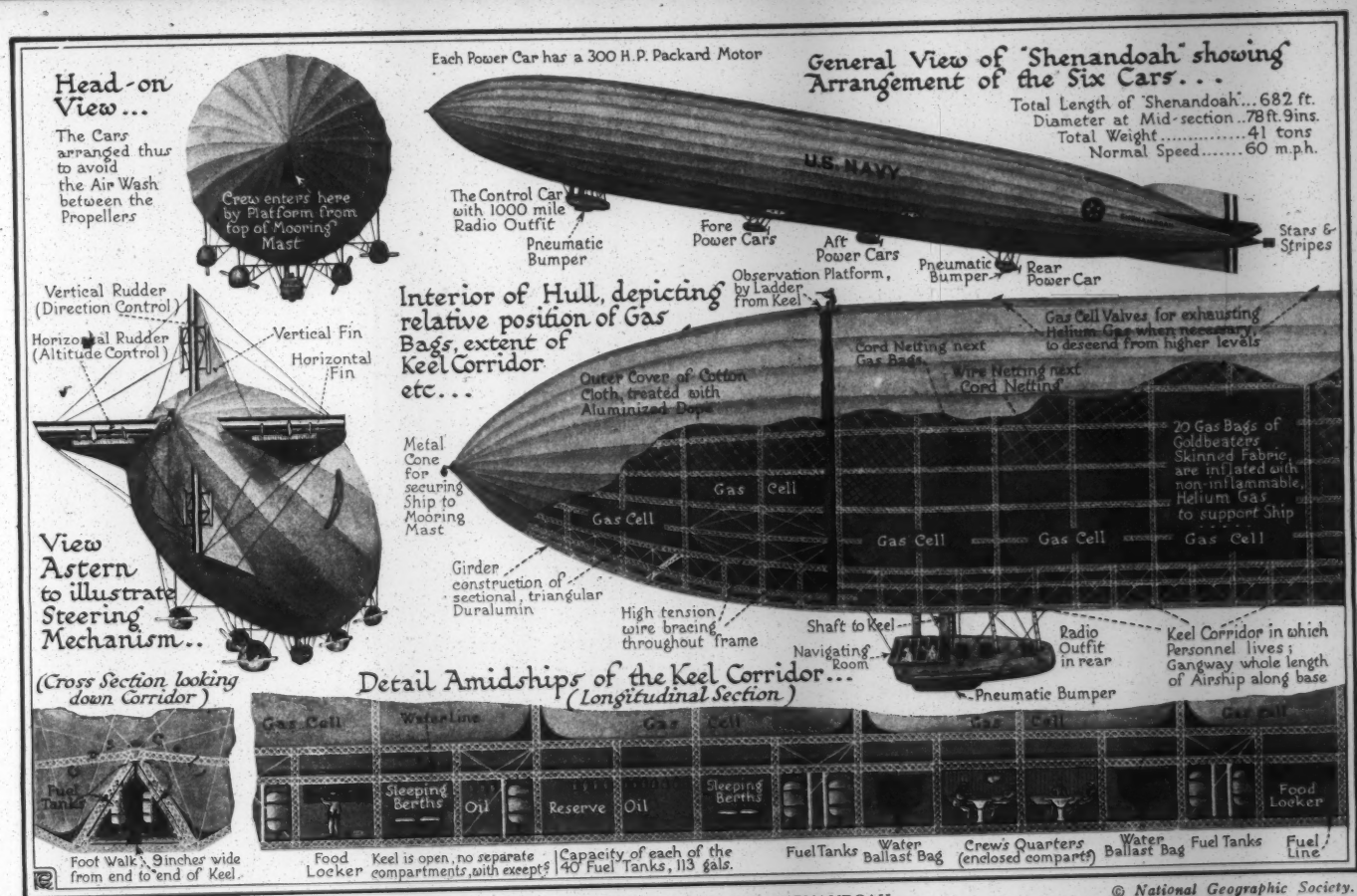
"The region around Etah has special attractions for a botanist. Some fifty specimens of flowering plants can be found in bloom in a few minutes' walk.

"Poppies, pinks, dandelions, daisies and buttercups can be gathered beside the glaciers that touch the ocean's edge. In places the Kentucky Bluegrass forms a thick carpet, though in general the plants do not grow tall, the willow bushes being only one or two inches high in favored situations.

"Timothy grows so luxuriantly that an American farmer would be delighted at the fine prospect of a hay crop.

Lichens Most Conspicuous Plants

"Besides the higher plants there are the lichens, which are the most conspicuous plant growths of all. They clothe the cliffs completely, up to a height of 2,000 feet, in brilliant hues of orange and purple which, in mosaic with green


Head-on View...
The Cars arranged thus to avoid the Air Wash between the Propellers
Crew enters here by Platform from top of Mooring Mast
Each Power Car has a 300 H.P. Packard Motor
General View of "Shenandoah" showing Arrangement of the Six Cars...
Total Length of "Shenandoah"...682 ft.
Diameter at Mid-section..78ft.9ins.
Total Weight.....41 tons
Normal Speed.....60 m.p.h.
U.S. NAVY
The Control Car with 1000 mile Radio Outfit
Pneumatic Bumper
Fore Power Cars
Aft Power Cars
Pneumatic Bumper
Rear Power Car
Stars & Stripes
Vertical Rudder (Direction Control)
Horizontal Rudder (Altitude Control)
Vertical Fin
Horizontal Fin
Interior of Hull, depicting relative position of Gas Bags, extent of Keel Corridor etc...
Observation Platform, by Ladder from Keel
Gas Cell Valves for exhausting Helium Gas when necessary to descend from higher levels
Cord Netting next Gas Bags
Wire Netting next Cord Netting
Outer Cover of Cotton Cloth, treated with Aluminized Dope
20 Gas Bags of Goldbeaters Skinned Fabric, are inflated with non-inflammable Helium Gas to support Ship
Metal Cone for securing Ship to Mooring Mast
Gas Cell
Gas Cell
Gas Cell
Gas Cell
Gas Cell
Girder construction of sectional, triangular Duralumin
High tension wire bracing throughout frame
Shaft to Keel
Navigating Room
Radio Outfit in rear
Keel Corridor in which Personnel lives; Gangway whole length of Airship along base
Pneumatic Bumper
View Astern to illustrate Steering Mechanism..
(Cross Section looking down Corridor)
Detail Amidships of the Keel Corridor...
(Longitudinal Section)
Gas Cell
Water Line
Gas Cell
Gas Cell
Gas Cell
Fuel Tanks
Sleeping Berths
Oil
Reserve
Oil
Sleeping Berths
Food Locker
Foot Walk, 9 inches wide from end to end of Keel.
Food Locker
Keel is open, no separate compartments, with exceptions
Capacity of each of the 40 Fuel Tanks, 113 gals.
Fuel Tanks
Water Ballast Bag
Crew's Quarters (enclosed compartments)
Water Ballast Bag
Fuel Tanks
Fuel Line

A PICTORIAL DIAGRAM OF THE SHENANDOAH

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The Story of the Shenandoah

THE *SHENANDOAH* was America's best-known vehicle. Hundreds of thousands have seen some of the country's "crack" trains and giant ocean liners; literally millions have watched the silvery *Shenandoah* steal silently across the sky.

This airship comprised many wonder stories of modern science. Its length, 680 feet, was two-thirds that of the *Leviathan*, yet its weight of only 37 tons was a tiny fraction of the *Leviathan's* 50,000 tons.

Frame a Maze of Girders

As the airship floated mysteriously overhead, it looked like a magnified cigar, wrapped in tin foil, with six tiny baskets suspended from it. Inside the covering were 20 great gas bags, with a total gas capacity equal to the cubic contents of a train of 700 freight cars. These were interspersed with from 40 to 78 gasoline tanks and a complement of one-ton water tanks.

This equipment was supported by a metal framework which was a veritable maze of girders, struts, and beams; there were 3,000 struts alone in the intricate design.

It was for this metal framework that duralumin was used—an alloy so light and strong that a girder 16 feet long can be balanced on one's little finger, yet if the tips are placed on blocks it will bear the load of eight men sitting upon it.

The engines could drive the craft for more than two days and nights at 60 miles an hour, or if the ship slowed down to a mere average express-train speed of 50 miles an hour, it could travel for 90 hours.

Pullman Train of the Skies

In one of its six cars was a photographic laboratory, so that motion-picture reels and photographs might be developed on board and the pictorial story of a flight be ready when the ship landed, or even thrown overboard by parachutes at designated places. Another car had a sound-proof radio compartment with a powerful sending apparatus and telegraphic instruments.

The airship was the Pullman train of the skies, albeit faster and smoother, providing its passengers with dining-car food, comfortable berths, shelter from the elements, and unrivaled "observation platforms."

The most astonishing mechanical contrivance on the *Shenandoah* was the water-recovery apparatus, which replaced the gasoline burned with an equivalent weight of water, and thus saved the valving of the precious helium.

Formerly, as fuel was burned, the ship grew lighter and tended to rise. Thereupon the gas expanded, and it was necessary to release enough helium to equalize the lift of the gas to the weight of the ship.

Even though helium cost has been brought from a radiumlike luxury price to $81 for a thousand cubic feet, the amount the *Shenandoah* had to valve on long trips was an expensive operating item. On its famous St. Louis visit, for example, 200,000 cubic feet of helium had to be valved. The water-recovery device meant a saving on one such trip of $16,200—enough to pay for the experimentation and installation of the mechanism.

patches of grass and black where the birds have kept the rocks bare, produce a spectacle of color rivalling that of the Bad Lands.

"The species of animals are fewer in number and, with the exception of the Dovekies, or little Auks, the number of individuals is also relatively small. The Dovekies, or Bullbirds, are present in swarms of incredible magnitude, crossing a bit of sky within a moment after one has looked. Their cries resemble the laughter of a maniac and the combined effect of the thousands of voices of a colony has been bewildering, after the airplanes stirred them up as they perched above their nests an arm's length deep amid huge rocks."

Bulletin No. 1, October 19, 1925.

National Geographic Society.

MARTIN PLACE, IN SYDNEY, NEW SOUTH WALES, AUSTRALIA

This Sydney street reminds one of Michigan Avenue, Chicago, and the resemblance is carried further by a similarity in the atmosphere of the two cities. The same enterprising spirit prevails in this Australian metropolis that exists in our own city at the head of Lake Michigan.

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Hawaii: America's Pacific Outpost

HAWAII, recently the objective of the first long non-stop seaplane flight over Pacific waters, is the subject of a communication to the National Geographic Society from its president, Dr. Gilbert Grosvenor.

"The annexation of the Hawaiian Islands by the United States has turned out to be as good a bargain for the entire United States as it has proved for the Islands themselves," says Dr. Grosvenor.

Valuable Islands Cost Us Nothing

"Great as is the value of Hawaii as the first line of America's military and health defense in the Pacific, these advantages are ours without the net expenditure of a single dollar of mainland money.

"The people of Hawaii not only pay for the operation of their own government, but in addition contribute largely to the National Treasury at Washington to reimburse it for present-day expenditures for the Territory's defense.

"Not only do they give Uncle Sam a dollar for every one they spend on themselves, but they do it with a willingness and a pride in the causes of the Nation that make them peculiarly entitled to the consideration of their fellow-countrymen on the mainland.

Visitors Amazed at Mid-Sea Metropolis

"The quarter of a century that has now passed since the American flag first floated over Hawaii has seen its people develop a loyalty to that flag and a devotion to the Republic's ideals that are not excelled even in those States whose proud boast may always be that they are of 'The Original Thirteen.'

"The visitor, however well prepared by reading and by conversation with Hawaiian advertisers, cannot escape amazement at the great enterprising metropolis of Honolulu which greets him in these lonely islands in mid-Pacific—vociferous taximen, flivvers and luxurious limousines, spacious hotels, many miles of suburban concrete roads; morning and afternoon newspapers that publish long press dispatches from the mainland and even give the daily quotations of the New York stock markets and the big league baseball scores; large department stores thronged with buyers and displaying the latest New York, London, and Paris fashions; a great university plant and fine public school buildings; a superb country club, with golf courses that can compete with our best national links; a Carnegie library; electric trolley cars whose fares are regulated at Washington, 5,000 miles away; a canning factory that puts up more than one million cans of pineapples in one day, a world-famous agricultural experiment station, and countless other manifestations that we have entered an American-minded community.

Any Climate You Wish

"Roughly computed, the annual mean temperature is 75.55°, with a divergence in either direction of 7.55°. As a general rule, the temperature is cooler by four degrees for every thousand feet of altitude, so that people can choose their climate to suit themselves without leaving the Islands.

"We had an amusing illustration of the variety of climate on Oahu. We had requested the privilege one morning of viewing a noted Japanese garden at Waikiki. The owner, with typical Hawaiian hospitality, immediately assented, and added that his wife would be happy to receive us, but he was not sure that he

PINEAPPLE PLANTATION ON THE ISLAND OF OAHU

© National Geographic Society.

Long strips of specially treated paper are laid over ground which has been carefully prepared. Through punctures in the paper, slips of pineapple are inserted. The paper, by conserving the moisture and subduing the weeds, increases the growth of the plant and the yield of fruit and also greatly reduces the labor of cultivation.

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The Rubbers of Jungle, Orchard and Meadow

HOW FAR does rubber stretch? Scientists have discovered that raw rubber stretches throughout the Tropics and even to our own American meadows.

Milkweed is one of the hundreds of varieties of plants, bushes, trees, roots and vines in the world that contain rubber. Milkweed, however, cannot supply sinews which will stand the strain demanded of the commercial product.

"Para" Rubber Orchard Crop

Plantations of the Malay States, Java and Ceylon monopolize the famous "Para" type of rubber, but, with one exception, they do not control the other useful rubbers. "Para" rubber (originally the gum which came to the world through the Brazilian port of that name), is now an orchard crop. But the other commercial rubbers, gutta percha, balata and chicle have not been tamed to straight rows. As "Para" rubber was sought twenty years ago, so these others must be wrested from the wild jungle to-day. Indians do the work in Central and South America and native Malay tribes do it in the Far East.

Latex makes the rubber family kin. Latex is milk from irritated plants. Like cow's milk, its color is white, its globules of rubber are in suspension in the water base like globules of fat, and it will sour quickly if not preserved. The function of latex is different from that of milk, and different from the function of sap, with which it is often confused. Nature uses it as a combination fly paper and automatic vulcanizing patch.

Milk of the milkweed, familiar to every boy and girl, is essentially the same as the milk of the king tree of the rubber world. But milkweed milk has only a fraction of rubber in its latex, while the best rubber trees give from one to two quarts of rubber per gallon. The latex occurs in a layer of cells between the outer and inner bark. It brings certain death to a beetle that attempts to bore into the tree. Having killed the borer the latex proceeds to heal the wound by drying into a little patch of rubber. Plainly, if this patch were hard and brittle, the tree's swaying would break it open. Foresighted Nature prevents new fissures by fixing a patch which stretches. She is such a good craftswoman that hundreds of chemists wrestling for a rubber substitute have not equaled Nature's elastic.

Used for Cables and Golf Balls

Singapore, Britain's key port of the East Indies, is the world market for gutta percha, one of the most important other rubbers, just as it is for "Para" rubber. Big "percha" trees which natives slash for "gutta" (gum) are found in the jungle forests of Indo-China, Siam, Malay States, and in adjacent islands, although plantation cultivation is coming in. Gutta percha still commands the commercial field it first invaded, submarine cable insulation. In recent years it has found a new usefulness closer home. Golf balls combine gutta percha and another rubber; the interior is wound with "Para" rubber thread; the whole is bound in a gutta percha sheath.

On first sight there seems to be no good reason for the existence of Boa Vista, the only town on the Rio Branco, an Amazon tributary as big as the Ohio

could locate her at such short notice. He had a town house in Honolulu, the Japanese villa at Waikiki for surf-riding, a mountain retreat on Nuuanu, a ranch house on the dry plateau near Schofield Barracks, and a bungalow on the rainy northeast shore. All these establishments were within two hours' ride, and yet each had an entirely different atmosphere. As he had failed to ask his wife in the morning what kind of climate she had selected for the day, he was at considerable trouble to find her.

Pearl Harbor Matchless Naval Base

"Pearl Harbor, which is located some eight miles from Honolulu, is one of the finest natural naval bases in the world. With a depth of over sixty feet, an area of nearly ten square miles, reached by a tortuous channel from the sea, and completely hiding all vessels within its haven from view toward the sea, it leaves nothing to be desired as a natural naval base.

"A start has been made in capitalizing its natural strength. A huge dry dock, large enough to float any ship sanctioned by the naval treaty, is in operation, but very little else has been accomplished to insure our permanent possession of this strategic point."

Bulletin No. 3, October 19, 1925.

ME-ÓISH-OO AND SHOO-E-OING-WA TAKE A SUN BATH WITH THEIR PUPPIES ON FATHER'S BIG BEARSKIN RUG

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Sydney: Australia's Metropolis

SYDNEY, AUSTRALIA, brought into unusual prominence in the date lines of American newspapers by the recent visit of a great fleet of American warships, seems less like a foreign city to visitors from the United States than many cities much nearer our own shores.

Sydney is big and bustling. It has business buildings on the "American plan"; wide-awake newspapers (printed in English, of course); fine shops; theaters offering London and New York hits; and restaurants that serve roast beef and potatoes and "ham-and." In a word, Americans find pretty much the same atmosphere they are used to back home. Citizens of other Australian cities are constantly chiding Sydnians with having become "Americanized."

In Many Ways Like San Francisco

Specifically, Sydney is most often compared with San Francisco. The similarity begins at the harbor mouth where the "Sydney Heads" stand in place of the Golden Gate, marking the doorway to a great landlocked bay with a huge city climbing the hills from its shores. The streets of Sydney, however, are neither so broad nor so steep as those of the Golden Gate city. Another point of similarity between Sydney and San Francisco is the existence of thriving suburban communities across the bay, and the busy shuttling of ferries back and forth.

Its excellent harbor has been one of the big factors in making Sydney, with its population of about a million, the great city which it is to-day. The Heads stand about a mile apart—great, pink sandstone cliffs, one 240 and the other 270 feet high. From The Heads the harbor winds inland for 13 miles, varying in width from a quarter to two miles. Its importance is greatly enhanced by the existence of innumerable arms and bays and coves, nearly all with deep water to the shore, making them admirable for the handling of shipping. The harbor has been compared to a huge fern leaf with its many convolutions. Nearly 200 miles of water front is available in Sydney harbor. The people of Sydney insist that theirs is the best harbor in the world; and certainly it is among the finest.

Circular Quay City's Center

Most of the peninsulas and points are wooded and stand high above the water, and have been used as sites for handsome villas and more modest bungalows.

The city had its birth on Sydney Cove, four miles inside The Heads on the southern shore of the harbor. There Governor Phillip, the father of Australia, landed in January, 1788, and about this cove the city, small and great, has ever since centered. Along the shore of the cove is the well-known Circular Quay on which passengers from the great ocean liners land, and to and from which most of the ferries ply.

On the land side, the chief streets lead from the Circular Quay. The street of streets is Pitt. On it and George, Elizabeth and Castlereagh Streets nearby are shops that bear comparison with the best in London or New York, the princi-

River. Closer scrutiny by any one who wishes to travel a month in the jungle from Para, at the Amazon's mouth, will disclose that balata is one reason. Balata is a heavy, stiff rubber. It is obtained from the bully tree in the same manner the world's entire supply of fine "hevea" (or Para) rubber was once harvested in the Amazon Valley. The demand for balata to make rubber belting has in part compensated for the blight brought on the Amazon trade by the East Indies' capture of the Para rubber business.

How Chicle Helps Science

Even chicle, the Mexican and Central American gum which serves America's nervous jaws, is a kind of rubber, a close relative of balata. Over ten million pounds of chicle came from Yucatan and British Honduras to the United States last year. Indirectly, the American people's demand for chewing gum has boosted the cause of archeology, for many of the Maya ruins have been discovered by chicle hunters. The standing reward for discovery of forgotten, jungle-swallowed cities which one scientist offered to chicle gatherers brought many finds.

These are the main commercial rubbers. Each has a different quality. There are many others which give more or less good rubber more or less generously. Latex plants are typical of many plant families in their distribution. The most ambitious members of the rubber family, in contrast to those of the human race, inhabit the Tropics. In Central Africa, the East Indies and the Amazon the rubber brothers and sisters or cousins are tree giants or great vine dragons of the jungle. In northern Mexico they have become bushes. In parlors of the 1890's the Far East's huge India rubber tree lived a smug life as the "rubber plant." Our cherished temperate zone can produce naturally only latex-veined pygmies: the milkweeds, Indian hemp, bell flower, and sow thistle. It was from the sow thistle that Germany extracted some rubber during her war-time isolation.

Bulletin No. 4, October 19, 1925.

pal theaters, banking houses and insurance offices. The older buildings in Sydney are of British architecture, but the newer business buildings are built with the steel frame construction so popular in America, and are, in fact, modest "sky-scrapers." Since early days the height of buildings has been limited to 150 feet, and the limit is strictly adhered to.

An Out-Door City

Sydney is approximately in the latitude of Valparaiso and Buenos Aires, a comparable latitude to Santa Barbara, California. The climate is delightful and Sydnians are enthusiastic out-door advocates. Most of the residences are provided with sleeping porches used the year round. The provisions for sports and recreations are abundant. Three fine beaches open to the ocean are in easy reach, and almost in the city is a race track. The larger parks are provided with golf links, football fields, cricket "pitches," and tennis courts, while small parks in the heart of the city make available bowling greens, covered bowling alleys, and croquet grounds.

Sydney is growing faster than most of the large cities of the world. Within the past year it is believed to have passed the million mark. Already one-sixth of the population of the huge Australian continent is concentrated in Sydney and its growth goes rapidly on.

Bulletin No. 5, October 19, 1925.

Form for Renewal of Bulletin Requests

Many requests for the GEOGRAPHIC NEWS BULLETINS were made for the year ending with this issue. If you desire the Bulletins continued kindly notify the Society promptly. The attached form may be used:

School Service Department,
National Geographic Society,
Washington, D. C.

Kindly send.....copies of the GEOGRAPHIC NEWS BULLETINS for the school year beginning with the issue of....., for classroom use, to

Name.....

Address for sending Bulletins.....

City.....State.....

I am a teacher in.....school.....grade.

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